



## Innovations to strengthen aquatic resource governance on Cambodia's Tonle Sap Lake

# INNOVATIONS TO STRENGTHEN AQUATIC RESOURCE GOVERNANCE ON CAMBODIA'S TONLE SAP LAKE

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# INTRODUCTION

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Cambodia's recent freshwater fishery sector reform, instigated at the top level of government, is one of the country's most significant contemporary policy developments addressing natural resources management and rural development. Implemented in two main waves, the reforms culminated in the complete removal of all inland commercial fishing lots. This final step was applauded by international organizations, local civil society groups, local communities, and fishers whose livelihoods are largely dependent on the Tonle Sap Lake. The reforms have provided new opportunities for co-management of fisheries resources to improve local incomes, food security and livelihoods.

Yet serious problems still need to be addressed, including reportedly widespread illegal fishing, difficulties in protecting critical habitats, and competition among state agencies over resource management authority. Because of its central importance in the rural economy, sustainable management of the Tonle Sap Lake is also critical to reducing vulnerabilities that poor families face. Reducing vulnerability in turn contributes to social stability. If rural communities that rely on the lake's resources are denied access or displaced, or if the resources and ecosystems are allowed to degrade to the point of being unable to sustain rural livelihoods and critical ecosystem services, growing social conflict could result.<sup>1</sup>

This report is an output of the Strengthening Aquatic Resources Governance project. STARGO is a three-year, international action research collaboration aimed at building capacity to address the roots of natural resource conflict.<sup>2</sup> The analysis presented here is the result of a 15-month series of activities focused on the Tonle Sap Lake, beginning with a basin-wide forum held in Siem Reap in September 2011, shortly after the prime minister announced the suspension of commercial fishing lots, and concluding with a policy dialogue workshop in Phnom Penh in December 2012. The effort included a preliminary analysis of management challenges, a series of multistakeholder participatory assessments in Kampong Thom Province to identify constraints and opportunities in the fisheries governance context, dialogue workshops to set local action priorities, and a set of institutional innovations designed to improve collaboration and livelihood resilience, followed by monitoring and evaluation to assess the outcomes of these innovations and draw lessons for the broader reform process.

This report summarizes the context of the recent fishery reforms (Section 2), analyzes challenges and opportunities for policy implementation after the reforms (Section 3), and details the objectives of local institutional innovations in Kampong Thom Province (Section 4) and the outcomes from these (Section 5), followed by a discussion of the implications for ongoing efforts aimed at reducing resource conflict and building livelihood resilience.



# RESOURCE CONFLICT AROUND THE TONLE SAP LAKE AND THE ROOTS OF REFORM

Inland fisheries are crucial to the national economy, provide livelihoods and a social safety net, and have shaped Cambodian culture for centuries.<sup>3</sup> Today, with a total annual fish production of 300,000 to 450,000 metric tons, Cambodia's freshwater fishery sector ranks fourth in total production behind China, India and Bangladesh,<sup>4</sup> but first in per capita production.<sup>5</sup> The combined value of fisheries production, processing and trade contributed an estimated 7.3 percent of total GDP in 2011, making it the second-largest subsector after crop agriculture in terms of GDP contribution, according to the Ministry of Economics and Finance.<sup>6</sup> The fisheries sector is also critical to food and nutrition security, providing an estimated 50–80 percent of animal protein intake for communities in the region<sup>7</sup> and a critical source of vitamins and micronutrients.<sup>8</sup>

The Tonle Sap Lake is one of the most productive ecosystems in the world, due to its rich biodiversity supported by its vast flood plain and inundated forests, rivers and streams. About 4.1 million people living in the six provinces bordering the Tonle Sap depend on the lake and its flood plain for farming and fishing, while more than 1.2 million people derive direct livelihoods from fisheries.<sup>9</sup> According to the Cambodian government, fisheries and related economic activity provide full-time, part-time and seasonal employment for approximately one-third of the country's population.<sup>10</sup> The central importance of freshwater fisheries to Cambodia's food security, rural livelihoods and national economy is reflected in the government's National Strategic Development Plan, which aims to ensure that fisheries resources are governed toward achieving sustainable livelihoods and reducing poverty.<sup>11</sup>

Cambodia's valuable fishery resources have also long been the source of competition, and the recent waves of reform can be understood as efforts to more equitably manage this competition. The first wave of fisheries reform took place in 2000–2001, when the prime minister ordered the Fisheries Administration to reallocate some commercial lots for local and community use, beginning in Siem Riep Province. This shift from large-scale commercial

management to decentralized community-based management led to marked changes in user rights. Ultimately, more than 538,000 hectares, or 56 percent, of private fishing lots were released for public access.<sup>12</sup> The reform gave local fishers more opportunity to catch fish and improve their income, yet also aimed to increase protection of the fisheries. In practice, these goals have sometimes competed — a tension that continues in the current phase of reform.

The second wave of reform in 2011–2012 came as part of a broader campaign to address poor management, widespread illegal fishing and ongoing fisheries conflicts around the Tonle Sap Lake. Local fishers frequently complained of fishing lot operators using their power to unfairly prevent others from accessing fisheries resources or even from travelling across fishing lot areas. When announcing his decision to permanently eliminate the lots, the prime minister cited these disputes between fishers and lot operators, along with concerns over destructive fishing practices and reports of a declining fish catch among small-scale fishing families.<sup>13</sup> Community mobilization, complaints and petitions for change in the Tonle Sap Lake were also a motivating factor.<sup>14</sup> Also important was recognition on the part of the government that revenue generated by the commercial fishing lots had become less important to the national economy than the livelihoods sustained by small-scale fishing.<sup>15</sup> Two subdecrees issued in 2012 cancelled all 37 lots on the Tonle Sap Lake, banning research and investment lots, and redesignating these areas for either small-scale fishing or conservation (see Table 1).<sup>16</sup>



**Figure 1.** Map of Tonle Sap

Location	No. of fishing lots cancelled	Total area (ha) changed	Allocated to new community fisheries (ha)	Allocated to new conservation areas (ha)	Total area of fishing lots remaining
Tonle Sap Lake – 2001 <sup>(1)</sup>	56 <sup>17</sup>	553,552	553,552	0	434,934
Tonle Sap Lake – 2012 <sup>(2)</sup>	37	271,126	177,881 (65.6%)	93,245 (34.4%)	0
Whole country – 2012 <sup>(3)</sup>	80	412,654	315,152 (76%)	97,502 (24%)	0

Sources: (1) & (3): Opening remarks of H.E. Prof. Dr. Nao Thuok, Delegate of RGC and Director General of Fisheries Administration during Inception Workshop on Assessing Economic and Welfare Values of Fish in the Lower Mekong Basin on June 21, 2012; (2): Second deep fisheries reforms: No fishing lots in the Tonle Sap Lake. (2012). *DAP News*. Retrieved from <http://www.dap-news.com/typography/the-news/38024-2012-03-08-10-24-10.html>; Hun Sen defends pardon for fisheries crimes. (2012, March 9). *Cambodia Daily* 51(26).

**Table 1.** Reallocation of former fishing lots to community fisheries and conservation areas

In both waves of reform, the release of the lots was declared first, and formulation of a mechanism on how to manage the newly released areas followed. The first reform introduced a period of effectively open access, particularly at the start, when fisheries officers were called back from the field for orientation on new rules under the reform. This was followed by several years of experimentation with community fisheries in the absence of an authorizing legal framework. This changed in 2005 with a royal decree on establishment of community fisheries and subdecree on community fisheries management. In parallel, a Community Fisheries Development Office was established under the then Department of Fisheries, with the aim of supporting the growth of community-based management.

The 2012 reform was translated into law much more quickly. New legal instruments began to be issued just a week after the prime minister’s announcement of the final end to the fishing lot system, and decisions on redelineation of fishing areas followed in the subsequent months. In addition, multisectoral task forces were created to respond to widespread large- and middle-scale fishing that was considered both illegal and destructive. The reform resulted in over 65 percent of the released areas being designated for management by community fishery organizations and about 35 percent being designated for conservation purposes.

As was the case with earlier reforms, the 2012 fishery policy reforms brought new opportunities and a host of new challenges for effective policy implementation. The next section probes these, drawing on a wide range of stakeholder consultations.



Fish traders at Chhnoc Trou landing site, Kompong Chhnang Province, Cambodia

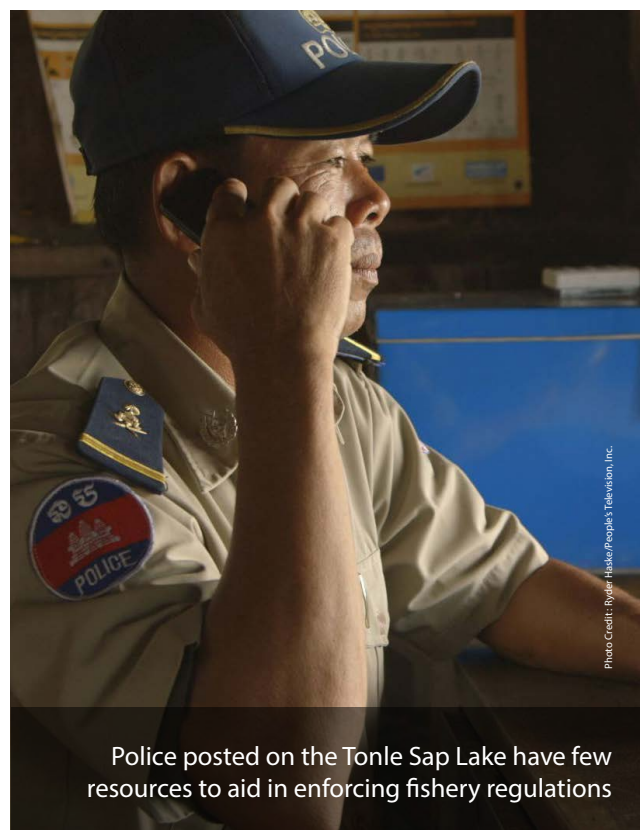


# CHALLENGES AND OPPORTUNITIES FOR POLICY IMPLEMENTATION AFTER THE REFORMS

Shortly after the prime minister's announcement suspending all commercial fishing lots, the STARGO project, in partnership with the Fisheries Administration, Global Fish Alliance and a range of other organizations,<sup>18</sup> supported a basin-wide multistakeholder dialogue. The dialogue brought together key stakeholder groups from local to national levels, with representation from five provinces surrounding the Tonle Sap Lake. Overall challenges and priorities identified are summarized in Table 2.

Key issues	Priorities
<ul style="list-style-type: none"> <li>• Illegal fishing practices.</li> <li>• Habitat destruction, such as clearing inundated forest for dry-season rice farming.</li> <li>• Fisheries resources depleted beyond regeneration capacity.</li> <li>• Conflicts over fisheries on the rise.</li> <li>• Overlapping roles and responsibilities of agencies.</li> <li>• Growing number of fishers puts depleting resources under even greater stress.</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen law enforcement to combat illegal fishing practices.</li> <li>• Build capacity of local authorities and communities, and raise public awareness.</li> <li>• Strengthen coordination and partnerships among Fisheries Administration, local authorities and NGOs.</li> <li>• Establish more community fisheries.</li> <li>• Establish alternative livelihood initiatives such as microcredit.</li> </ul>

**Table 2.** Summary of governance challenges documented at the basin-wide forum on Tonle Sap Lake fisheries, Siem Reap, September 2011<sup>19</sup>



Police posted on the Tonle Sap Lake have few resources to aid in enforcing fishery regulations

Recognizing the complexity of institutional and governance challenges involved in implementation of the reforms, the STARGO action research team conducted field interviews, focus group discussions and multistakeholder dialogue workshops coinciding with the launch of the new 2012 subdecrees. These activities were followed by participatory monitoring and outcome assessments. The aim was to combine perspectives of stakeholders working at basin-wide or national levels with those working at local and provincial levels. The focus was on actors in Kampong Thom Province who were living and working in and around the former fishing lots. These included local fishers, community fishery organization members, rice farmer association members, representatives from the Coalition of Cambodian Fishers, commune council and district authorities, fisheries officials from the cantonment, "sangkat" and sectional levels,<sup>20</sup> provincial environment officers, former fishing lot operators, and provincial cabinet members, as well as national-level officials from the Fisheries Administration and related agencies.

The dialogue workshops demonstrated that policy and legal reforms are necessary for addressing the challenges of sustainable resource management and resilient livelihoods on the Tonle Sap Lake, but they are not sufficient. Also essential are actions that build the capacity of actors at all levels, and that strengthen collaboration across sectors and across scales to manage competing resource uses equitably. The dialogue workshops and related consultations frequently touched on the following topics:

- **Rule-setting.** How can rules governing access to and use of fisheries and other natural resources on the lake be made responsive and appropriate to a variety of local conditions?
- **Enhancing community fisheries.** How will the authority and capacity of community fishery organizations be strengthened? How can they access the support needed from agencies at different levels?
- **Enforcement.** How will monitoring of fishing practices and enforcement of fisheries regulations be strengthened to support implementation of the new policies? How can the efforts of communities and various agencies be better aligned to support conservation?
- **Sustaining local livelihoods.** What are the options for making community fisheries more economically viable? How could community fishery organizations be reoriented to improve the livelihoods of community members and at the same time ensure sustainable use of fisheries resources?

Building on these consultations, the research team identified a set of four corresponding management challenges. What follows is a brief description of these challenges as well as the benefits and risks associated with actions to address each.

## Updating and clarifying fishing regulations

**Management challenges.** Communities and officials alike reported the widespread use of indiscriminate destructive fishing gear, as well as medium- and large-scale fishing gear that was previously permitted in the fishing lots but is now designated as illegal. Numerous inconsistencies and contradictions between the 2012 subdecrees, articles in the Fisheries Law, and other regulations have created confusion among fisheries managers and local fishers. These inconsistencies render the regulations ambiguous, making them very difficult to apply on the ground.

New regulations seeking to speed implementation of the new policy, put in place with little consultation, have failed to settle disputes over allowable gear and provide a basis for consistent enforcement. At a national dialogue on aquatic resources governance held in December 2012, participants from local communities noted that the regulations governing small-scale fishing were too weak to ensure protection of fisheries in the closed season but also too strict in prohibiting certain fishing gear that is considered common practice in some areas. Many participants also noted that the one-size-fits-all nature of the instrument does not work well, as variation in local social and environmental conditions present different opportunities for sustainable livelihood and fishing practices.

**Benefits and risks.** With the benefit of this experience, it may be appropriate to consider a more inclusive process of review and amendment of fishing regulations. An inclusive process of clarifying the limits of allowable family-scale fishing in ways that respond more specifically to local livelihood needs could help build commitment to enforcement and conservation measures. For example, one avenue for exploration is how regulations might distinguish between the needs of farming communities, who use fishing to complement their agricultural activities, and floating communities, who are largely dependent on fishing to generate income. As with any regulatory reform, however, there are also risks. In this case, opening debates over further regulatory changes could provoke



new conflicts, and further complexity in regulation could expand opportunities for abuse of power in enforcing the law. Well-positioned commercial interests could also use their influence to seek new restrictions on community resource access.

## Strengthening linkages between community fisheries and local government

**Management challenges.** The prime minister's declaration of the fisheries reform in February 2012 sparked a rapid response on the part of the Fisheries Administration. In the weeks following the new subdecrees, Fisheries Administration officials set out to demarcate 50 conservation areas, covering nearly 100,000 hectares.<sup>21</sup> By December 2012, the Fisheries Administration had created 15 new community fisheries in the six provinces bordering the Tonle Sap Lake, bringing the total to 226.<sup>22</sup> Although the Fisheries Administration was willing to engage communities and seek their input in mapping the new areas designated for community fisheries and conservation, the tight deadline imposed a severe constraint.

While all community fishery organizations on the Tonle Sap Lake are now registered, many have little understanding of their legal rights, roles and responsibilities. Many also lack member commitment and have weak mechanisms for advocating for their interests and collaborating with government agencies. Additionally, with expanded areas of the Tonle Sap Lake available for small-scale fishers, the incentives to invest in managing and protecting existing community fishery areas may have decreased. Some community fishery organizations are also concerned that the newly allocated areas are too large for them to effectively manage. Expanding efforts to assist community fishery organizations in building capacity for management of their assigned areas remains a pressing need.

**Benefits and risks.** Strengthening partnerships between community fishery organizations and local authorities could create conditions for local organizations to work together in order to achieve shared goals of conservation, law enforcement and livelihood development. In particular, integrating community fishery

organization and commune council planning could lend financial and administrative support to implementing the community fishery management plans. This integration also offers an avenue to address resource competition involving fisheries and other sectors, such as disputes over expansion of dry-season rice farming, dry-season water allocation, and clearing, protection or rehabilitation of flooded forests. Risks include the possibility that the community fishery organizations could lose their independence in the process, and that they would lack the evidence to make a compelling case for investment in resource management, as opposed to the more traditional infrastructure projects typically favored in commune development plans.

## Joint patrolling for resource conservation

**Management challenges.** In areas that have dry-season rice cultivation or a community protected area, participatory law enforcement by stakeholders at the local level is especially important. In certain areas of the flooded forest zone, tensions between dry-season rice farmers and community fishery organizations remain high. In such circumstances, the political will of authorities seems to play an important role in supporting collaborative efforts at enforcing the rules.

**Benefits and risks.** Joint participatory enforcement in fishing grounds and conservation areas by local communities, local authorities, the Fisheries Administration and environment authorities could improve the effectiveness, efficiency, transparency and accountability of enforcement efforts. Since each agency has its own weaknesses and strengths, working together to complement each other could achieve successful outcomes in the attempt to eliminate illegal fishing practices and conserve protected resources. Risks associated with joint patrolling include the potential for failure and blame in the absence of clear accountability mechanisms for collaboration, especially concerning the division of responsibilities and financial arrangements among partners. With multiple actors having shared or complementary responsibilities, it could also be more difficult to hold designated authorities accountable for inadequate enforcement.



Community fisheries leader Mr. Tuy Yong has worked to halt clearing of flooded forests in Kampong Kor Commune

## Piloting a community-based commercial fisheries model

**Management challenges.** Community-based commercial fisheries production — engaging the community as both resource user and manager — has recently emerged as an alternative management arrangement. While the approach may not be suitable in all areas, it is worth exploring where the resource base offers potential for sustainable commercial production, where there is potential for building the required management capacity, and where local support for enforcement is strong.

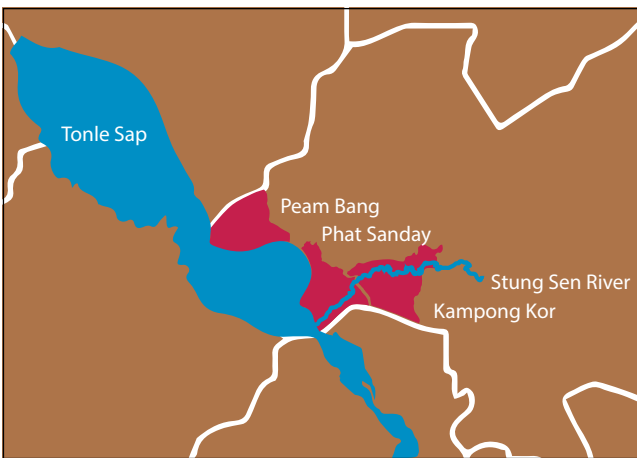
This management option, while attractive in principle, presents several challenges in implementation. First, the concept is not envisioned in current fishery policy, and could contradict some aspects of the current legal framework. Second, there is resistance to the idea of commercial production on the lake, given the very recent experience with the commercial lots and the frequent tension surrounding these. Third, there is little shared understanding of what this option would entail, so a significant effort in awareness building

would be required. Lastly, the local capacity requirements are beyond what is currently available in most community fisheries. Building a sense of local ownership strong enough to invest in the protection or rehabilitation of fisheries resources is already a big challenge in most community fisheries around the lake.

**Benefits and risks.** The concept aims to benefit communities by increasing the financial incentives for community-based management to support long-term resource sustainability. Risks include the difficulty of building capacities in management and enforcement of fishing access, effective coordination with various state authorities, and financial management to ensure transparency and protect against abuse.

In parallel with the identification of institutional challenges and opportunities, the STARGO project team supported a series of institutional innovations in Kampong Thom Province. The aim was to support innovations that would both respond to the immediate priorities of fishers and related local stakeholders and could yield lessons to address the broader management challenges outlined above. The premise was that improved collaboration across stakeholder groups is necessary to address all of these challenges, as well as the longer-term goals of resilient livelihoods, reduced conflict and ecosystem sustainability. The approach followed a process of multistakeholder dialogue and action planning called Collaborating for Resilience, or CORE (see box on next page).

Kampong Thom Province was selected because it had been an area of high conflict as well as the source of important prior innovations, including advocacy that led to the release of Commercial Fishing Lot No. 1 in 2010, preceding the national reforms.<sup>23</sup> The focal communities were Phat Sanday and Peam Bang communes, which are collections of floating villages, and Kampong Kor, with land-based communities situated along the Stung Sen River, a major tributary to the lake (see Figure 2.) A summary of the community characteristics is provided in the box on page 13.



**Figure 2.** Map showing location of the three focal communes

The first step in identifying local institutional innovations was to support multistakeholder dialogue sessions in each commune to assist local actors to assess the issues, identify actions within their capabilities, and make commitments as part of community action plans. In January 2012, the community fishery organization in Phat Sanday and a former fishing lot operator met to discuss ways that they could work together to manage the former fishing lot area to the benefit of both.

During the same time in Peam Bang, the community fishery organization and the commune council realized that the commune's limited fishing ground would not produce sustainable fish supplies if commune residents allowed illegal fishing activities to continue unabated. Following the dialogue workshop in Peam Bang, local actors took the initiative to pursue their action plans with relatively little external support.

In Kampong Kor, the commune dialogue meeting in January 2012 provided an opportunity for the community fishery organization and the dry-season rice farmers to meet and talk face to face despite the ongoing tension between the two groups. The fish sanctuary in Kampong Kor contains extensive flooded forest areas, which provide excellent fish habitat. Near the fish sanctuary, three reservoirs of various sizes have been established for dry-season rice farming. Water from the two lakes has been pumped into the reservoirs for irrigating crops, which competes with the goal of maintaining water levels in the lakes to sustain the fishery. Clearing of the flooded forest was also ongoing to expand the area of dry-season rice farming. An earlier resolution made at the provincial level had failed to solve the problem.



## Applying the CORE dialogue approach on the Tonle Sap Lake

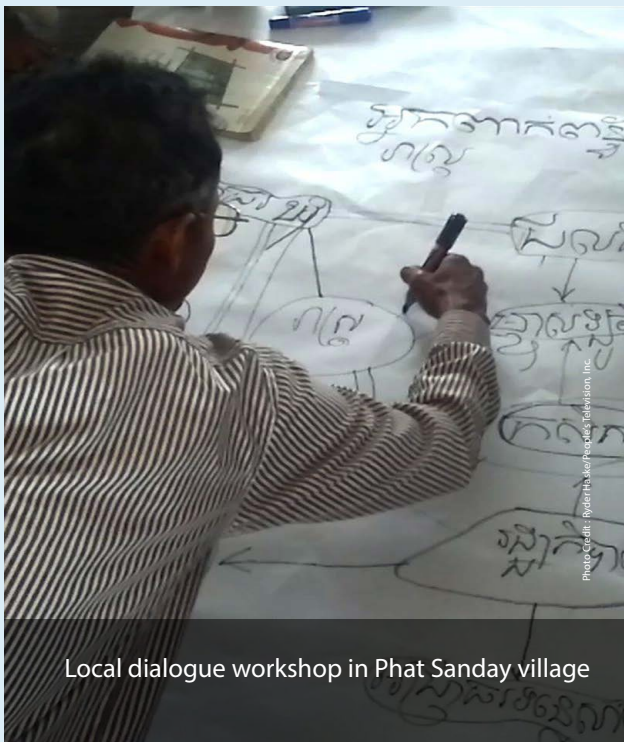
The CORE approach entails a cycle of exploring the potential for collaboration, facilitating dialogue, supporting actions in pursuit of shared goals, and engaging in a structured process of reflection and learning to assist in refining subsequent actions.<sup>24</sup>

WorldFish, in partnership with the Fisheries Administration and the Coalition of Cambodian Fishers, piloted the CORE approach in 2009–2010 in five provinces around the Tonle Sap Lake. This demonstrated the potential of the process to strengthen collaboration in the midst of resource competition, manage local disputes, and strengthen pathways for civil society influence in policy and regulatory reform.<sup>25</sup> The STARGO project built on that experience with the intention of providing more focused support to local innovations, as well as a more consistent effort at monitoring and evaluation of outcomes.



The first phase of the exploration, dialogue and action planning occurred at the basin-wide forum in Siem Reap. This launched a series of actions that included support to media to draw attention to livelihood risks and promising innovations around the lake, support to strengthen communications among NGO, community and government actors, and ground-level efforts at habitat restoration and protection.<sup>26</sup>

In focusing on the three communities in Kampong Thom Province, WorldFish researchers moved into a supporting role, with the Analysing Development Issues Centre leading in scoping and organizing the local dialogue events, and the Cambodia Development Resource Institute leading on the analysis of management options. As part of the local scoping in January 2011, the action research team conducted informal household interviews to gain a better understanding of the principal issues facing the local fishers, and visited important sites within the commune to discuss the issues in context.



Local dialogue workshop in Phat Sanday village

The team then facilitated two-day dialogue workshops at the commune level, bringing together stakeholders from villages and local authorities from the area. Afterward, the team documented the key points of the discussions and resulting local action plans, as well as reflections on the process. This documentation, along with a comparative reflection among research team members who worked in each of the three sites, provided a baseline of information from which to judge subsequent changes.

In the following months, in consultation with the Fisheries Administration and others, the team identified opportunities to support local innovations that would both respond to these local action plans and provide a basis for learning about strategies to meet the broader challenges of resource governance around the lake.

## Characteristics of the three focal communities

Phat Sanday Commune consists of six villages with a total of 1,158 households along the Stung Sen River at the point where it meets the Tonle Sap River. During most of the year, households in Phat Sanday are floating.

Peam Bang Commune consists of five villages with a total of 585 households and contains several floating communities. The villages are generally far from one another and the villagers rely mainly on fishing to support their livelihoods.

Kampong Kor Commune is a land-based area located along the Stung Sen River. The commune consists of five villages with a total of 1,316 households. The villagers in the commune rely mainly on a combination of dry-season rice farming and fishing to support their livelihoods. The commune has a fish sanctuary that includes two lakes, covering a combined total area of 2,925 hectares. Several deep pools in the Stung Sen River also serve as critical fish habitat.



Boy washing in the river outside his floating house, Phat Sanday village

There was also potential for cross-commune action. Two of the three communes proposed to expand public fishing grounds into the area of the former lots, which at that point had been declared temporarily closed to all fishing in order to reduce pressure on their designated fishing grounds and better protect their fish sanctuaries. These requests could be brought to higher authorities through the power of collective voice.

As it became clear that the area of public access and community fisheries would indeed be significantly expanded, local priorities shifted from advocacy for increasing access to fishing grounds to making the community fishery organizations more effective. After the dialogue sessions in each commune, the action research team brought together government officials, community representatives, and local authorities from Phat Sanday, Peam Bang and Kampong Kor communes to jointly discuss issues of common concern, develop a common action plan, and identify new opportunities for mutual dialogue and cooperation among relevant stakeholders to aid in implementing the community-level action plans.

Based on priorities identified by the local communities, the STARGO team decided to support institutional innovations in three areas:

- Collaborative enforcement to reduce illegal and destructive fishing.
- Managing competing uses of water and land in the flooded forest zone.
- Piloting community-based commercial production.

Two NGOs working in the sites, HOM and the Fisheries Action Coalition Team, entered into an agreement with WorldFish to support these institutional innovations, as did the Fisheries Administration, committing support from fishery officials at different levels in order to ensure effective implementation. Each has taken steps to create awareness of the initiative with the communities and local authorities, to build needed capacities, and to help negotiate new management arrangements.

Over the course of 2012, the STARGO research team conducted monitoring and evaluation exercises, led by the Analysing Development Issues Centre (see box below). These exercises began with the initial community-level dialogue events that helped to establish a baseline on issues and relationships, and continued through local actions and support provided by partners. Lastly, the team supported a national dialogue workshop

convened by the Fisheries Administration in December 2012 to bring together participants from the village level with officials at provincial and national levels to share experiences, assess progress and challenges with the innovations, and explore ways forward. This section outlines conclusions from the monitoring and evaluation of outcomes, addressing benefits as well as obstacles and ongoing challenges.

## Monitoring and outcome evaluation

Monitoring and evaluation in the CORE process aims to support learning among partners engaged in collective action and help them adapt to changing circumstances. The assessment team developed a simple community-led monitoring plan in which designated individuals who were engaged in the action planning and implementation were responsible for keeping a record of follow-up actions. The team also introduced a one-page form for community fishery organization members to document each key meeting or patrolling trip.

To supplement this community-led monitoring, the Analysing Development Issues Centre team undertook follow-up monitoring and outcome evaluation visits on three occasions (April, September and December 2012). These included individual and group meetings with community fishery organizations, village leaders and elders in villages in Peam Bang and Phat Sanday communes. In Kampong Kor, the ADIC team talked to a group composed of dry-season rice farmers and the community fishery organization, and visited the sanctuary being affected by dry-season rice farming and flooded forest destruction.

To assist in sharing lessons and scaling up actions to address the focal priorities, the team convened a provincial meeting in April 2012 with community leaders and local authorities from the three communes, NGOs, and government officials to share emerging challenges and discuss strategies to strengthen collaboration among the three communes and draw in the necessary support from other agencies at provincial and national levels. As part of the follow-up, the team interviewed commune councilors, police, and fishery and environment officials to hear their viewpoints. These officials and 10–15 other participants were subsequently invited to a focus group meeting to discuss details and debate ideas that each of them raised, and discuss observations by the ADIC team on progress and challenges to date. In addition to the local outcome monitoring visits, the ADIC team followed up with key participants in the provincial workshop to gain more detail on subsequent events.



Provincial dialogue meeting, Kampong Thom, 2012



## Improving enforcement against illegal fishing

Outcome evaluations confirm that community fishery organizations in all three communes have made successful joint efforts to address aquatic resource governance, particularly in terms of patrol and crackdown on illegal activities. Stakeholders have also shown willingness to engage and share resources in order to work together to address illegal fishing. Table 3 summarizes collaboration and crackdown activities in late 2012. The meetings and joint patrolling activities have led to stronger linkages between community fishery organizations and local authorities,

building a stronger basis for the community fishery organizations to request support from the commune when necessary, in particular to address natural resources conflicts.

Goal	Area of support for local innovation
Increase opportunities for collaboration with relevant stakeholders to reduce illegal fishing activities.	Community fishery organizations, local authorities, fisheries and environment officials, and police have committed to work together to initiate joint patrolling and to respond to illegal fishing.

Commune	Action	Participants	Accomplishments
Peam Bang	8 crackdown activities	Community fishery organization members, fishers, Fisheries Administration officials, policemen and commune councilors.	Destroyed illegal equipment, police arrested perpetrators.
	3 joint patrols	Fishers, community fishery organization members, Fisheries Administration officials, policemen and commune councilors.	Patrolled to protect resources.
	2 meetings	Fishers.	Discussed conservation plan and activities.
Phat Sanday	6 meetings	Fishers, community fishery organization members, Fisheries Administration officials, policemen, commune councilors, environment officials and soldiers.	Prepared for re-election of community fishery organizations, selected poor secondary school graduates to become local teachers, discussed community fishery organization's role and plans.
	2 crackdown activities	Community fishery organization members, Fisheries Administration officials, policeman, commune councilor and environment official.	Collected illegal equipment, raised awareness among in-migrant fishers.
	6 joint patrols	Community fishery organization members, Fisheries Administration officials, policemen, commune councilors and environment official.	Patrolled in key areas, removed illegal equipment.
Kampong Kor	2 meetings and other actions	Community fishery organization members, policeman, villagers, Fisheries Administration officials, NGO staff, Ministry of Water Resources official and commune councilors.	Erected guard post and signage in sanctuary, did inventory, built spillover dam, partially completed GPS positions in Zone 3 of the sanctuary.
	2 crackdown activities	Community fishery organization members and villagers.	Raised awareness, photographed and made agreement to stop bush destruction in sanctuary.
	1 joint patrol	Villagers and community fishery organization members.	Patrolled in key areas of sanctuary.

**Table 3.** Outcome monitoring of joint patrolling activities based on local records, September – December 2012

Participants from all three sites noted a reduction in illegal fishing. During the policy dialogue workshop and December 2012 monitoring visit, community fishery organization representatives and the participating Fisheries Administration official referred to the solidarity and willingness of all stakeholders as key in dealing with illegal fishing activities.

However, challenges remain. The commune council has supported patrol and crackdown activities only by assigning councilors to join, but no monetary allocation from the commune development budget has been made for fisheries management. This lack may stem from insufficient attention to the issue in commune planning processes, as well as a lack of clear guidelines on how to evaluate impact from resource protection.

Community confusion and frustration regarding changes to the regulations on allowable gear is also a source of ongoing tension between community fishers and enforcement agencies. This confirms how important it is to engage community members and local authorities in the process of revising or formulating rules and regulations that affect their livelihoods. Failing to do so can perpetuate conflict and perhaps decrease the ability of national authorities to marshal local support for other kinds of development activities.

## Managing competing water and land uses in the flooded forest zone

This innovation supported local dialogue between groups engaged in dry-season rice farming and community fisheries in Kampong Kor Commune. Tensions between the community fishery organization and the dry-season rice farming committee were pronounced, signaling the need for coordinated efforts to promote dialogue and joint planning. Major causes of tension were the destruction of the flooded forest areas due to expansion of dry-season rice cultivation and the pumping of water from seasonal lakes for rice irrigation. Along with the decrease in forest cover, the pumping negatively impacts fish spawning grounds and habitat. Several attempts were made in early 2012 to resolve the issues through dialogue at the local and provincial levels, but without lasting success.

While not able to resolve the issue of land cleared for rice farming, an April 2012 training on conflict management organized by the Cambodia Development Resource Institute improved relations between the farmer associations and community fishery organizations. Representatives from the three communes, the commune councilors from each, and officials from the Fishery Administration participated. The evaluation follow-up also revealed that the intervention could have been more effective had the trainers provided ongoing capacity support for conflict management with the participants as they worked through the various disputes in subsequent months. In addition, the evaluation highlighted that NGO partners on the ground would benefit from specialized skills in conflict management.

Responding to local concerns, the Fisheries Administration organized a multistakeholder meeting in March 2013 that included local authorities and representatives of both the rice farmers and the community fishery organization. This explored other arrangements to address the issue of water pumping and resulted in an agreement to return recently cleared land to forest by replanting and protecting the area for regeneration; however, there remains some dispute over the specific areas that should be included in the agreement.

Goal	Areas of support for local innovation
Improve the dialogue and collaboration between government, private sector and civil society actors in resource governance by focusing on the tension between dry-season rice farmers and fishers in the flooded forest zone.	Support for dialogue and conflict management.  Community outreach to agencies such as the Fisheries Administration, police and environment officials to address the destruction of inundated forest areas for dry-season rice farming.

## Piloting community-based commercial production

The third institutional innovation supported efforts to develop an experimental approach to community-based fisheries management, termed community-based commercial production. The idea is to explore options for commercial production under community management, similar to the model that exists in the forestry sector. This would aim to generate revenue for community livelihoods, as well as to finance joint patrolling between the community fishery organization and local officials in order to more effectively protect fish sanctuaries within the community-managed areas.

Early efforts at awareness raising regarding community-based commercial production were unsuccessful, largely due to a lack of understanding of the concept by the NGOs contracted to raise awareness. However, at the national policy dialogue workshop in December 2012, community representatives affirmed their desire to promote community-based commercial production for the benefit of the communities, and especially to garner sufficient resources to effectively manage the fishery resources in the area. The director general of the Fisheries Administration reaffirmed his support, and the idea was welcomed by most participants, including other Fisheries Administration officials. This experience highlights how the role of communicating and awareness raising remains key to mutual understanding and implementation, especially with a new initiative.

Initial steps taken to lay the groundwork for community-based commercial production included restructuring of the community fishery organizations and elections of new

Goal	Areas of support for local innovation
Improve dialogue and collaboration between government, private sector and civil society actors in resource governance by seeking alternative models to generate income for local livelihoods and collective conservation efforts.	Dialogue involving communities, local authorities and the Fisheries Administration to explore potential for a pilot initiative on community-based commercial production.

community fishery organization members at the village and commune level. In the case of Peam Bang Commune, three village-level committees agreed for the first time to set up a federation. If community-based commercial fish production is put into practice, the federation will have a key role to play in coordinating with the commune council and other state agencies. There have also been discussions concerning the rules that would apply to the new management model. Additionally, the community fishery organizations have supported other efforts to strengthen household livelihoods by seeking income diversification outside of fisheries. In the case of Phat Sanday Commune, this includes efforts to promote planting short-season crops in seasonally flooded areas and — most significantly — a successful advocacy effort that resulted in the government allocating 700 hectares of upstream land to the fishing communities for rice farming.



Floating guard house established by community initiative in the community-designated fish sanctuary in Kampong Kor Commune



# CONCLUSION

The Tonle Sap Lake is a vast, complex and fragile ecosystem that supports the livelihoods and food security of millions. Because of its central importance in the rural economy, the lake's sustainable management is critical to reducing the vulnerabilities that poor families face and thereby contributing to social stability. Cambodia's freshwater fishery reforms open up significant opportunities to enhance these benefits but require long-term collaboration among multiple stakeholders to innovate new institutional arrangements, evaluate and learn from these experiences, and adapt on the basis of this learning.

Cambodia's reforms have significance beyond the country, as they constitute the largest transfer of freshwater fisheries access rights from commercial to community-based management in all of Asia. The success or failure of the reforms in improving national food security, local livelihoods, and resilience to future adverse trends and shocks will send a strong signal to other reform efforts in the region and beyond. Indeed, at a time of rapidly increasing international investment in natural resource sectors, a reform effort that rolls back large-scale commercial resource allocation in favor of a more localized approach merits careful assessment. In this section, we summarize significant aspects of the Tonle Sap context and point to lessons from the process of multistakeholder dialogue and action research.

**A surge in fishing effort, with new risks.** The fisheries reforms have broadened access to resources by local fishers. Anecdotal accounts from various sources reported more catch by individual fishers, who ascribed this to broader access. Recalling the fishing boom following the last reform, when enforcement was temporarily suspended, many fishers rushed to invest in larger gear — much of it destructive — to take advantage of the confusion immediately after the reform. Many soon saw their gear banned or confiscated by officials. Although household access to fishing grounds has increased, the poor reportedly remain relatively disadvantaged because of the investment in gear required to take advantage of the expanded access. The reforms have also raised new ecological risks as more people fish, particularly in the terrestrial environments, increasing pressure on sensitive fisheries habitats. These early observations suggest that, while the broad policy change can open livelihood opportunities, institutional support and a more nuanced approach to regulation is required to achieve equitable and sustainable benefits for the poor.

**Ongoing debates over rules and regulation.** The issue of small-scale fishing in the contemporary context of Tonle Sap livelihoods has never been addressed by a comprehensive effort to update rules in response to the specific geographic, ecosystem and socio-cultural conditions in different locales. To date, apart from the major shift in access introduced by the reforms, the revision of rules governing small-scale fishing has focused on allowable gear rather than fishing practices more broadly. The revision of gear regulations distinguished between three large geographic categories — Tonle Sap, Mekong and coastal — but does not provide a means for further adaptation at more local scales. There remains a gap, therefore, between the nationally set regulations and efforts at the scale of individual community fisheries to establish appropriate management bylaws governing fisheries use and access.

**First steps toward joint patrolling and enforcement.** In areas that have dry-season rice cultivation or a community protected area, participatory law enforcement by stakeholders at the local level is especially important in patrolling conservation areas and fishing grounds. The political will of relevant stakeholders seems to have played an important role in collaborative efforts at enforcing the rules. Yet, the remaining tension between dry-season rice farmers and community fishery organizations points to the need for further engagement of state agencies in conflict management and law enforcement.

**Exploring community-based commercial production.** Community-based commercial production has emerged as a model that would increase the financial incentives for community-based management. While the approach is not suitable in all areas, it is worth exploring where the resource base offers potential for sustainable commercial production. Community revenue generation could provide leverage for members to engage more effectively in co-management schemes while ensuring their own livelihoods are not compromised. Yet many implementation obstacles remain. Individual government officials remain skeptical about local innovation on community revenue generation and how it can be managed locally. Nevertheless, civil society groups continue to organize for approval of the details of a pilot effort. The Fisheries Administration is similarly motivated to draw on the lessons of such local innovations to inform future policy implementation.

**A commitment to experimentation and learning.** Participants in the December 2012 dialogue forum emphasized the importance of local participation in formulating rules and policies that affect fishing communities. Rules formulated without community consultation have been viewed as unsuitable to local needs, building tension between the communities and enforcement entities. Yet long delays in deciding on or implementing new rules can be equally problematic. As the director general of the Fisheries Administration affirmed in the national dialogue event, the challenge of implementing the reforms is ongoing, requiring open communication among all players and a willingness to experiment and learn together. A commitment to experimentation and participatory learning implies further innovation in terms of processes to promote local innovation, document lessons, and apply these to future institutional and policy reform efforts. New capacities are required on the part of government agencies and local change agents to support this.

The CORE dialogue process is one approach that can be applied by government and civil society groups alike to support such joint learning by identifying future options, assessing obstacles and building collaboration to address these. While many challenges remain, the experiences documented in this report indicate that such a dialogue process has helped reduce conflicts and catalyze collaborative actions that provide a source of learning for governance innovation.

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- <sup>7</sup> ADB [Asian Development Bank]. (2005). The Tonle Sap initiative: The Tonle Sap and its fisheries. Manila: Asian Development Bank.
- <sup>8</sup> Director General of Fisheries Administration Nao Thuok made this remark in the Inception Workshop on Assessing Economic and Welfare Values of Fish in the Lower Mekong Basin on June 21, 2012, at Cambodiana Hotel, Phnom Penh.
- <sup>9</sup> Ibid.
- <sup>10</sup> So, S., Ratner, B., Mam, K., and Kim, S. (2011). Conflict and collective action in Tonle Sap fisheries: Adapting institutions to support community livelihoods. CDRI Working Paper Series No. 49. Phnom Penh: Cambodia Development Resource Institute.
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- <sup>17</sup> The total number of fishing lots cancelled in six provinces (including Banteay Meanchey) in Tonle Sap Lake was 56, of which 16 lots were completely cancelled and 40 were partly cancelled.
- <sup>18</sup> Other organizations involved in an advisory group for the dialogue included Cambodia Development Resource Institute, Community Peacebuilding Network, Cambodian Organization for Women Support, Coalition of Cambodian Fishers, Culture and Environment Preservation Association, community fishery organizations, Community-Based Natural Resource Management Learning Institute, Royal University of Agriculture, and Wildlife Conservation Society.
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- <sup>20</sup> At provincial level, there are three levels of government fishery administration, ranked from the top: Provincial Fisheries Cantonment, Sectional Fisheries Authority, and Sangkat Fisheries Authority.
- <sup>21</sup> Fisheries Administration identifies 50 conservation areas in Tonle Sap Lake. (2012, April 10). *Radio Free Asia*. Retrieved from [http://www.rfa.org/khmer/indepth/cam\\_to\\_save\\_rare\\_fishes-04102012050203.html](http://www.rfa.org/khmer/indepth/cam_to_save_rare_fishes-04102012050203.html)
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# LIST OF ABBREVIATIONS

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ADIC Analysing Development Issues Centre  
CDRI Cambodia Development Resource Institute



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